

Handwritten signature/initials.

**Notice of Allowability**

Application No.

09/879,806

Examiner

Jason M. Perilla

Applicant(s)

HIETALA, ALEX WAYNE

Art Unit

2638

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed December 21, 2004.
2. ☒ The allowed claim(s) is/are Claims 1-6, 9-12, 14-17, and 21-23 renumbered respectively as claims 1-17.
3. ☐ The drawings filed on \_\_\_\_\_ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All b) ☐ Some\* c) ☐ None of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☒ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date 20050805.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |  |
|--|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)                                  |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date <u>20050805</u> . |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date <u>6/3/02</u> | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment  |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material                             | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance                         |
|  | 9. <input type="checkbox"/> Other _____.   |

### EXAMINER'S AMENDMENT

1. Claims 1-6, 9-12, 14-19, and 21-23 are pending in the instant application.
2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Chad Beavins (51468) on August 5, 2005.

The application has been amended as follows:

**In the Specification:** on page 10, line 10, "switch 642" is replaced by –switch 676--.

**In the Claims:**

Regarding claim 1, in line 8, "plurality of first threshold values" is replaced by –first plurality of threshold values--, in lines 13-14, "plurality of second threshold values" is replaced by –second plurality of threshold values--, in line 16, "values of said I" is replaced by –values of said sequences of I", and, in line 17, "signals in consecutive" is replaced by –signals over consecutive--.

Regarding claim 4, in line 6, "signals in consecutive" is replaced by –signals over consecutive--, and, in lines 7-8, "signals in two consecutive" is replaced by –signals over two consecutive—

Art Unit: 2638

Regarding claim 5, in line 2, "GMSK" is replaced by –Gaussian Minimum Shift Keyed (GMSK)--.

Regarding claim 6, in line 7, "N and N+1" is stricken.

The following versions of claims 10, 14, and 15 replace all prior versions in their entirety:

10. The method of claim 9 wherein:

a first one of said sequence of digital values, represented as +1, is achieved when said analog modulation signals are greater than ~~exceed~~ said positive threshold value at a predetermined time;

a second one of said sequence of digital values, represented as a -1, is achieved when said analog modulation signals are less ~~more negative~~ than said negative threshold value at said predetermined time; and

a third one of said sequence of digital values, represented as a 0, is achieved when neither of said first one or said second one ~~digital values~~ is achieved.

14. A signal converter comprising:

an input circuit for receiving analog modulation signals comprising in-phase (I) and quadrature (Q) analog modulation signals;

for each of the in-phase (I) and quadrature (Q) analog modulation signals, at least one comparator for comparing ~~at least one of~~ said analog modulation signals with at least one threshold signal level to produce a first output digital signal when said ~~at least one~~ analog modulation signal signals bears bear a first relationship to said at least one threshold signal level, and to produce a second output digital signal when said ~~at least one~~ analog modulation signal signals bears bear a second relationship to said at least one threshold signal level;

a decoder for receiving said first and second output digital signals from said at least one comparator for each of said in-phase (I) and quadrature (Q) analog modulation signals and outputting digital modulation signals corresponding to said in-phase (I) and quadrature (Q) analog modulation signals; and

Art Unit: 2638

a divider circuit having a variable fractional divisor determined by said digital modulation signals;

~~wherein said analog modulation signals comprise in-phase (I) analog modulation signals and quadrature (Q) analog modulation signals.~~

15. The converter of claim 14 wherein said in-phase (I) and quadrature (Q) analog modulation signals comprise Gaussian Minimum Shift Keyed (GMSK) ~~GMSK~~ analog modulation signals.

Claim 18 is CANCELLED.

Claim 19 is CANCELLED.

Regarding claim 21, in line 15, "applying digital modulation" is replaced by –  
applying said digital modulation—

**Claims 1-6, 9-12, 14-17, and 21-23 are renumbered respectively as claims 1-17, and the claim dependency is renumbered accordingly.**

3. The following changes to the drawings have been approved by the examiner and agreed upon by applicant:

In figure 6, according to the attached Examiner's Amendment to the drawings, the reference "642" of the switch coupled to the DIGITAL INTERFACE 640 is amended to be reference 676.

In order to avoid abandonment of the application, applicant must make these above agreed upon drawing changes.

***Allowable Subject Matter***

4. Claims 1-6, 9-12, 14-17, and 21-23 renumbered respectively as claims 1-17 are allowed.

5. The following is an examiner's statement of reasons for allowance:

Claims 1-6, 9-12, 14-17, and 21-23 renumbered respectively as claims 1-17 are allowed because the prior art of record does not disclose or obviate the claimed at least one comparator for each of an in-phase and quadrature input analog modulation signals to create digital signals which are applied to a decoder creating digital modulation signals coupled to a divider circuit having a variable fractional divisor determined by the digital modulation signals. The separate comparators for each of an in-phase and quadrature input signals creating input signals for a divider of a separate signal having a variable fractional divisor determined by the in-phase and quadrature signals is allowable subject matter.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."


***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M. Perilla whose telephone number is (571) 272-3055. The examiner can normally be reached on M-F 8-5 EST.

Art Unit: 2638

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye can be reached on (571) 272-3078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Jason M. Perilla  
August 5, 2005

jmp

  
CHIEH M. FAN  
PRIMARY EXAMINER

